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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KANTAMNENI, SHOBHA	
ART UNIT	PAPER NUMBER
1627	

NOTIFICATION DATE	DELIVERY MODE
12/10/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

BostonIPDocket@mwe.com

Office Action Summary	Application No.	Applicant(s)	
	10/590,301	BABISH ET AL.	
	Examiner	Art Unit	
	Shobha Kantamneni	1627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *NONE* is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/28/2009 has been entered.

Applicant's amendment filed on 10/28/2009, wherein claims 1, and 4 have been amended.

Applicant's arguments have been considered, but not found persuasive. The rejection of claims 1-3 under 35 U.S.C 102(e) as being anticipated by Shahlal et al. (US 6,583,322, PTO-1449) is MAINTAINED. See under response to arguments.

Applicant's arguments have been considered, but not found persuasive. The rejection of claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over Kuhrts (US 2004/0137096, PTO-892) is MAINTAINED. See under response to arguments.

The rejection of claims 1-7 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-7 of copending Application No. 10/789,814 is herein withdrawn. Note that applicant has filed a Terminal Disclaimer..

Claims 1-9 are pending and examined herein.

Claim Objections

Claims 2-3, 5-6, are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 2, 5 recite the limitation “wherein said isoalpha acid is selected from…..”, and claims 3, 6 recite "wherein said reduced isoalpha acid is selected from.....". These limitations are present in independent claims 1, and 4.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, and 8 are rejected under 35 U.S.C 102(e) as being anticipated by Shahlal et al. (US 6,583,322, PTO-1449).

Shahlal et al. discloses compositions comprising a reduced isoalpha acid (RIAA) and isoalpha acid (IAA). Isoalpha acids include isohumulone, isocohumulone, isoadhumulone, reduced isoalpha acid disclosed therein include dihydro isoalpha acids (DHIA), and hexahydro isoalpha acids ((HHIA). See abstract; FIG.1; FIG.2; column 1,

lines 14-24.; lines 60-63; column 4, lines 2-25. It is also disclosed that compositions therein which are mixtures of DHIA, and IAA remained clear liquids at all ratios between about 1 and 99 %., and comprise at least 0.1 % of the composition. See column 18, lines 15-45. Shahlal also teaches that the RIAA, and IAA are derived from hops.

Thus, Shahlal et al. anticipates instant claims 1-3, and 8.

Response to Arguments

Applicant's arguments have been considered, but not found persuasive.

Applicant argues that "Although the "ratios between 1 and 99%" may cover the claimed ratios of 'RIAA (i.e., dihydroiso alpha acids) and IAA of about 3:1 to about 1:10', Shahlal ratios do not fall within the claimed ratios, nor do they have any anti-inflammatory properties and, therefore, cannot anticipate them." These arguments have been considered, but not found persuasive. Shahlal discloses that compositions therein which are mixtures of DHIA, and IAA remained clear liquids at all ratios between about 1 and 99 %, and comprise at least 0.1 % of the composition. The ratios disclosed by Shahlal et al. encompass/read on instant therapeutically effective antiinflammatory ratios of about 3:1 to about 1:10. Thus, Shahlal et al. anticipates instant claims 1-3, and 8.

Applicant argues that "Shahlal et al is directed to composition having a high trans to cis ratio of isomers. The Applicants maintain that Shahlal teaches that the high trans ratio is important to the properties of non-precipitating, non-cloudy solutions (e.g., beer). Shahlal does not teach that the high trans ratio of isomers imparts any anti-inflammatory properties." These arguments have been considered, but not found persuasive. It is

pointed out that Shahlal need not teach that the high trans ratio of isomers impart anti-inflammatory properties because instant claims are drawn to composition, and the properties are inherently present in the composition. Shahlal discloses instant composition, and the properties are inherently present in the composition.

Applicant argues that "because the claimed ranges of RIAA and IAA have anti-inflammatory properties and are narrower than the ranges disclosed in Shahlal et al, claims 1-3 and 8 do not read on Shahlal et al. and are not anticipated by that reference." These arguments have been considered, but not found persuasive because the instant ratios in claims 1-3, 8 read on Shahlal et al. ratios of between about 1 and 99 %.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhrts (US 2004/0137096, PTO-892).

Kuhrts teaches pharmaceutical compositions comprising hops extract consisting of iso-alpha acids (IAA), and reduced iso-alpha acids (RIAA) such as iso-humulone, iso-cohumulone, iso-adhumulone, dihydroiso-humulone, dihydroiso-adhumulone of the instant formula, and combinations thereof. It is also disclosed that iso-alpha acids which

are combinations of reduced isoalpha acid(RIAA) and isoalpha acid(IAA) will be present in an amount of 0.5 % to 10 % by weight in the hops extract. See page 4, paragraphs [0027], [0031]; page 5, paragraph [0034], Example 1, wherein 3 % of Iso-alpha acids are present in the Hops extract; page 6, claims 1-5, 21-26.

Furthermore Kuhrts teaches the same method of reducing inflammation as instantly claimed, comprising administering Hops extract consisting of Iso-alpha acids and reduced iso-alpha acids such as iso-humulone, iso-cohumolone, iso-adhumolone, dihydroiso-humolone, dihydroiso-adhumolone. See page 5, paragraphs [0035]-[0038] ; page 7, claims 1, 9,13, 21, 25.

Kuhrts does not expressly teach the ratio of reduced isoalpha acid : isoalpha acid as about 3:1 to about 1:10, in the composition.

Kuhrts does not expressly teach that the composition contains at least 0.1 % of RIAA and IAA individually.

It would have been obvious to a person of ordinary skill in the art at the time of invention to determine or optimize parameters such as effective amounts of the reduced isoalpha acid and isoalpha acid employed in the composition of Kuhrts, to obtain a desired effect such as reducing inflammation.

One having ordinary skill in the art at the time the invention was made would have been motivated to determine the effective amounts of Iso-alpha acid and reduced isoalpha acid employed in the pharmaceutical compositions for methods of reducing inflammation in which the ratio of reduced isoalpha acid : isoalpha acid is about 3:1 to about 1:10, since the optimization of effective amounts of known agents to be

administered is considered well in the competence level of an ordinary skilled artisan in pharmaceutical science, involving merely routine skill in the art.

One having ordinary skill in the art at the time the invention was made would have been motivated to determine the effective amounts of Iso-alpha acid (IAA) and reduced isoalpha acid (RIAA) employed in the pharmaceutical compositions for methods of reducing inflammation as 0.1 % of RIAA and 0.1 % of IAA, since the optimization of effective amounts of known agents to be administered, is considered well in the competence level of an ordinary skilled artisan in pharmaceutical science, involving merely routine skill in the art.

It has been held that it is within the skill in the art to select optimal parameters, such as amounts of ingredients, in a composition in order to achieve a beneficial effect. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Note: The ratio of RIAA to IAA of the instant claims such as 3:1 to 1:10 as in claim 1 is broad and might read on the ratio of the prior art composition, hops extract. The individual amounts of RIAA and IAA of the instant claims such as at least 0.1 % of the composition as in independent claims 1, 4, 7, includes any amount between 0.1 % to 99 % which is broad and might read on the prior art composition containing hops extract.

Response to Arguments

Applicant's argues that "Applicants describe in their application that "synergy was noted for all RIAA:IAA combinations, albeit at different segments of the dose-response curves." See Example 4 of the application as filed on page 31, paragraph 104 to page

32. This unexpected finding showed that while RIAA and IAA could act synergistically over a wide range of ratios and concentrations as shown in Figures 4A-H of the specification, they could also act additively or even antagonistically at certain other concentrations. See Figures 4A-H for tabulated CI (Combination Index) values and the specification on pages 30-31, paragraph [0100], which defines CI values of <1, =1, and >1 to indicate synergism, additivity and antagonism, respectively." These remarks have been considered. It is pointed that synergy was noted at the lower portion of the dose-response curves for RIAA:IAA combinations of 10:1, 1:1 and 1:100, covering RIAA concentration of $2.5x10^{-8}$ to 0.26 µg/mL, and synergy was noted at the higher end of the dose-response curve for RIAA:IAA, ratios of 100:1, 3:1, 3:2, 2:3 and 1:10 over RIAA concentration of 0.31 to 68,261 µg/mL i.e synergy is observed at only particular/specific doses, and not at any dose/amount of RIAA and IAA. Thus, the evidence in the examples is not commensurate in scope with the claimed invention and does not demonstrate criticality of a claimed range of the ingredients in the claimed method. See MPEP § 716.02(d). Therefore, the evidence presented in specification herein is not seen to support the nonobviousness of the instant claimed invention over the prior art because Kuhrts teaches that the composition comprising iso-alpha acids such as iso-humulone, iso-cohumulone, iso-adhumulone, dihydroiso-humulone, dihydroiso-adhumulone of the instant formula (Genus A), and combinations thereof is useful in reducing inflammation.

Further, the Examiner disagrees because the synergistic amounts are still not commensurate to scope. The claims encompass any amount of RIAA and any amount

of IAA at ratios were synergy was not shown. The specification demonstrates synergy with RIAA and IAA in certain ratios (see page 32, Table 6). For instance, RIAA alone has an IC50 of 0.24 but does not get better with the addition of IAA, except at a ratio of 1:1 (IC50 = 0.23). On the other hand IAA alone has an IC50 of 0.56 and only gets better at a ratio of 10:1 (IC50 = 0.28) and 1:1 (IC50 = 0.23 of RIAA:IAA. Further, RIAA employed is Redihop (rho-iso-alpha acids(RIAA), 29.5-30.5 %, <0.2 % iso-alpha acids) see page 27, paragraph [093], thus all of the specific compounds claimed in claim 1 are not those in which specifically demonstrated synergy in Table 6. Therefore, synergy does not exist with all of the compound combinations, at any amount, and ratios of the current claims.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shobha Kantamneni whose telephone number is 571-272-2930. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, Ph.D can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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